

Remarks

Status of the Claims

Claims 1-66 were pending in the application. All claims stand rejected. By this paper, claims 1-3, 5-17, 19, 27, 41, 51, 65, and 66 have been amended, and claims 4, 18, 26, 50, and 65 have been canceled. New claim 67 has been added. In view of the amendments, reconsideration of the claims is respectfully requested.

Claim Objections

Two claims were mistakenly identified as claim 65, which are referred to in the Office Action as 65(1) and 65(2), respectively. Applicant has canceled claim 65(2), which has been reintroduced as new claim 67.

Double Patenting

Two terminal disclaimers are enclosed herewith to obviate the double-patenting rejection.

Section 101 Rejection

Claims 1-16 were rejected under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter. Claim 1-16 have been amended to recite a computer-readable medium. According to the Interim Guidelines,

a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Interim Guidelines, Annex IV (page 52). In view of the amendments, Applicant respectfully requests that the rejection be withdrawn.

Section 102 and 103 Rejections

Claims 1, 2, 4, 5, 7-11, 14-20, 24, 26, 27, 29-33, 36-39, 41-44, 48, 50, 51, 53-57, 60-63, and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawler et al. ("Lawler"). Claims 3, 25, and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Matthews, III ("Matthews"). Claims 6, 28, and 52 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Maryka et al. ("Maryka"). Claims 12, 34, and 58 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Hassell et al. ("Hassell"). Claims 13, 35, and 59 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Ellis et al. ("Ellis"). Claims 21-22 and 45-47 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Knudson et al. ("Knudson"). Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Knudson and further in view of Knudson et al. (U.S. 2005/0204388) ("Knudson2"). Claims 40 and 64 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Young et al. ("Young"). Claims 65 (first instance) and 65 (second instance) were rejected under 35 U.S.C. 103(a) as being unpatentable over Lawler in view of Kamen et al. ("Kamen"). These rejections are respectfully traversed for the reasons set forth below. Applicant respectfully submits that each of the pending claims, as amended, is patentably distinct from the cited references, individually and collectively.

Claims 1, 17, 41, 65, and 66

Independent claims 1, 17, 41, 65, and 66 have been variously amended to recite that a program interface object (PIO) comprises:

a *separate data structure* for *encapsulating*:

a plurality of attributes carrying information about the television program;

a plurality of user-selectable actions performable by the interactive television system in connection with the television program, ***the user-selectable actions being represented within the PIO as sets of program code for carrying out the respective actions***; and

a visual indicator displayable in a graphical user interface to facilitate user interaction with the PIO, wherein the graphical user interface is ***other than a grid-based electronic program guide with rows and columns corresponding to channels and timeslots***.

Support for these amendments may be found, for example, in FIG. 5 and its accompanying text, as well as pages 1 and 2 of the specification.

Therefore, a PIO, as claimed, is a specific type of data structure for representing a particular television program within an entertainment system. The claimed PIO not only includes attributes for providing information about the television program (e.g., title, description, rating, running time), but also includes actions to be performed in connection with the television program, the actions being represented by sets of program code that are executable by the interactive television system (e.g., program code for causing the entertainment system to record the program).

The claimed visual indicators are displayed in a graphical user interface “other than a grid-based electronic program guide with rows and columns corresponding to channels and timeslots.” Applicant specifically pointed out the shortcomings of grid-based EPGs in the present application:

While EPGs have numerous advantages over conventional printed guides (such as TV Guide®), EPGs are still based on the channel/time slot model, which is of diminishing importance today.

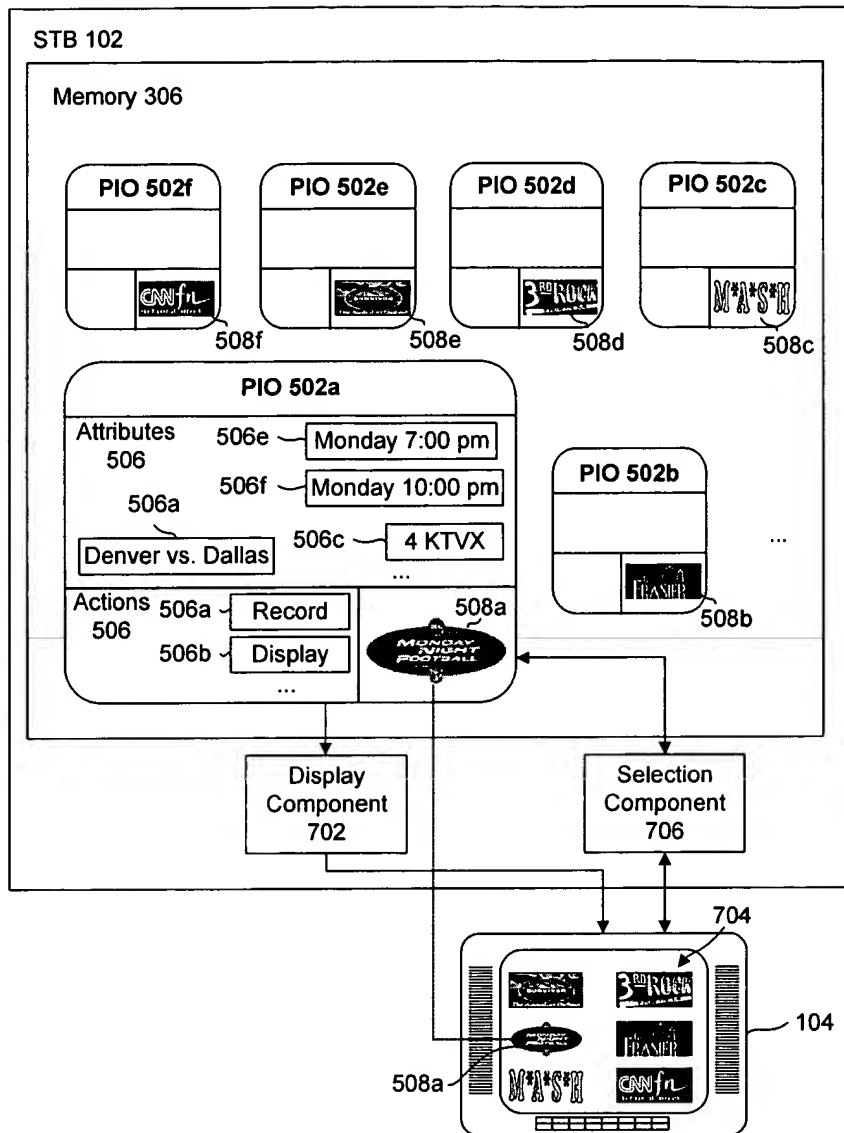
* * *

Forcing a viewer to search through a grid consisting, for example, of over 500 rows (corresponding to channels) and possibly thousands of columns (corresponding to time slots) is no longer acceptable. Given the wide variety of entertainment options and the limited amount of time available to individuals for entertainment, any advancement increasing the convenience of an entertainment system would be highly advantageous.

Specification at page 2.

Moreover, the claimed attributes, actions, and visual indicator are all “encapsulated” within a single data structure, meaning that they are “encase[d] in or as if in a capsule” or that the PIO “form[s] a capsule or sheath around” the actions or attributes. See www.dictionary.com. Thus, merely citing examples of particular data or functions at different points in one or more references does not necessarily satisfy the limitation of those data and functions being “encapsulated” within a PIO. Although Applicant believes that encapsulation is inherent in the definition of a program interface object, Applicant has added this language to help the Examiner understand how the term is being used in the claims.

As illustrated below in Figure 7 of the present application, each PIO exists as a discrete object including all of the attributes, actions, and visual/audible indicators for interacting with the corresponding television program. For instance, the PIO 502a includes a number of attributes, such as the name of the program (“Dallas v. Denver”), the starting time (“Monday, 7:00 p.m.”), etc. In addition, the PIO 502a includes a number of actions (“Record”), which are represented within the PIO 502a as program code for carrying out the actions.



As illustrated below in Figure 8 of the present application, the PIOs are not displayed in the traditional grid-type EPG format of Lawler, which consists of rows and columns corresponding to channels and time slots. The claimed visual indicators may be displayed individually or in combination with other visual indicators using a desktop metaphor. A user may click on, highlight, or otherwise select one of the visual indicators, which results in a context menu or the like being displayed. A user may then select an action from the context menu, which causes the associated code within the PIO to be executed by the interactive television system.

Lawler does not disclose or suggest a program interface object (PIO) within any reasonable interpretation of the term. For the claimed PIO, the Office Action simply refers to Lawler's "program schedule information of a particular listing (Column 7, lines 10-2)." Office Action at page 3. However, Lawler is completely silent about the data structure(s) used to store this information. Furthermore, the Office Action points to various locations in Lawler's specification and figures for the claimed attributes, actions, and visual indicator, none of which are described as being encapsulated within a single data structure.

Lawler does not disclose PIOs specific to a particular television program. Lawler does not disclose PIOs that encapsulate all of the actions and attributes necessary to interact with the PIO. Lawler does not disclose combining attributes conveying information about a program with actions represented as sets of program code in a single data structure. In short, Lawler does not disclose or suggest any of the limitations of claim 1, 17, 41, 65, and 66. Furthermore, the elements Lawler does describe are shown in the context of a grid-based EPG, contrary to the claim limitations.

Maryka, cited by the Examiner in connection with claims 6, 28, and 52, merely discloses the existence of JavaBeans. Applicant never claimed to have invented JavaBeans, which is simply one technology for implementing the claimed PIOs. Maryka uses JavaBeans to facilitate transfer of software programs between computers in such a way that a transfer interrupted by a power failure on the receiving device can be recovered. Maryka says nothing about using JavaBeans to encapsulate all of the attributes, actions, and visual/audio indicators associated with a particular television program.

Anticipation under § 102 is proper only if the reference shows exactly what is claimed. Titanium Metals Corp. v. Banner, 778 F.2d 775, 780 (Fed. Cir. 1985); MPEP § 2131. In this case, Lawler clearly does not disclose exactly what is claimed. Applicant respectfully submits, therefore, that the § 102 rejection should be withdrawn, and that claims 1, 17, 41, 65, and 66 are allowable. All other claims, with the exception of claim 67, depend directly or indirectly from one of the foregoing claims, and are likewise allowable for at least the same reasons.

Claims 5, 27, and 51

Claims 5, 27, and 51 have been amended to recite that:

the program code is substantially ***machine-independent format*** that is executable in a ***virtual machine*** within the entertainment device and ***any destination device to which the PIO is sent***, such that the ***program code does not need to be installed on the destination device*** prior to receiving the PIO in order to perform an associated user-selected action.

Support for this amendment may be found, for example, in pages 18-20 of the present application.

These claimed features allow a destination device to which a PIO is sent (e.g., another set-top box) to execute the one or more actions associated with the PIO without requiring the program code to be pre-installed on the destination device. Furthermore, providing the program code in a machine-independent format allows PIOs to be shared between a variety of different types of devices, such as cellular phones, personal computers, and set-top boxes (STBs).

As an example, a user may transmit a PIO representing a television program from an STB to her cellular telephone. The PIO may include an action for displaying one or more of the attributes of the PIO, e.g., the starting time of the television program. The cell phone does not need to have software installed for examining the PIO and outputting the requested information. Instead, the action, as represented by machine-independent code within the PIO, may be executable by a virtual machine within the cellular telephone to output the attribute information, either on the telephone's display screen or to the user's personal information manager (PIM).

The term "machine-independent" is a term of art that is used to refer to program code that can run on different types of machines:

In Computer science, a machine-independent program is any program that can be run by any computer, without regard to its architecture or operating system. Any well-written Java or .NET application could be machine-independent because these platforms run on virtual machines on top of the real computer. The real machine-dependent part is the virtual machine, so this is the (usually little compared to the class libraries) chunk of code that needs to be ported. (<http://en.wikipedia.org/wiki/Machine-independent>).

Computer hardware device, code, debugger, compiler or other form of software program or hardware device that requires little or no change to work with other hardware or computers. (<http://www.computerhope.com/jargon/m/machinde.htm>).

The Examiner appears to be using the term "machine-independent" in a completely different way, contrary to the meaning understood by a person of ordinary skill in the art. For example, as interpreted at page 4 of the Office Action, "machine-independent" apparently simply means that applications are sent by the head-end to the set-top-box where they are executed. Lawler's applications are not described as executing at the head-end. In what way is his program code "machine-independent"?

With the present amendments, Applicant introduced the concept of a virtual machine running on the interactive television system and any destination device to which the PIO is sent. Lawler does not disclose or suggest a “virtual machine” within the set-top-box, the head-end, or any other device.

Finally, even if Lawler did disclose machine-independent program code, there is no teaching or suggestion that such code is encapsulated within a program interface object, along with attributes conveying information about a particular television program, as well as a visual indicator. Lawler is completely silent about how the program data and applications are formatted or stored. Combining the program data and applications into a single object, which can be manipulated in a graphical user interface via a visual indicator, is not even hinted at by the prior art of record.

The cited references do not disclose, individually or collectively, a PIO comprising program code “in a machine-independent format that is executable in a virtual machine within the entertainment device and any destination device to which the PIO is sent.” Thus, none of the cited references can avoid having “the program code ... installed on the destination device prior to receiving the PIO in order to perform an associated user-selected action.” Accordingly, claims 5, 27, and 51 are believed to be patentably distinct over the prior art of record.

Claims 3, 25, and 49

As recited in claims 3, 25, and 49, a PIO may not only encapsulate a plurality of attributes, actions, and visual indicators associated with a particular program, the PIO may also include an audible indicator capable of being played back by the interactive

television system. As shown in Figure 5 of the present application, all of these elements are encapsulated within a single data structure. This simplifies sharing of content between multiple users. For instance, a user need only select a particular PIO by its visual indicator and send it to a friend using e-mail or another suitable means to allow the friend to view information about the program, execute actions with respect to the program (e.g., record the program), and listen to audio content.

Neither Lawler nor Matthews discloses or suggest combining these disparate types of content into a specific object for representing a particular program. As pointed out by the Examiner, Lawler is silent about an audible indicator. Office Action at page 7. However, the addition of Matthews does not cure the deficiencies of Lawler. Matthews merely discloses that a digital audio segment may be played when a user selects a particular icon. Matthews is completely silent about how program information, actions, visual indicators, and audio indicators may be encapsulated within a single data structure. None of the cited references allow information and functionality to be so easily shared between users.

Conclusion

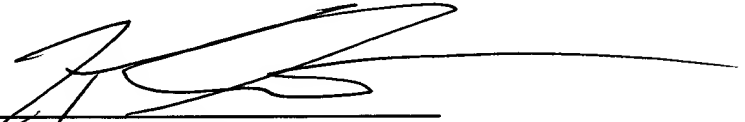
For at least the foregoing reasons, the cited prior art references, whether considered individually or in combination, fail to disclose each of the limitations in any of the pending independent claims. For at least the same reasons, each of the claims depending therefrom are also patentably distinct from the cited prior art. Therefore, all claims are believed to be in condition for allowance. A Notice of Allowance is

respectfully requested. The Examiner is encouraged to contact the undersigned at the telephone number provided below for a quick resolution of any remaining issues.

Respectfully submitted,

Digeo, Inc.

By

A handwritten signature in black ink, appearing to read 'Kory D. Christensen', written over a horizontal line.

Kory D. Christensen
Registration No. 43,548

STOEL RIVES LLP
One Utah Center Suite 1100
201 S Main Street
Salt Lake City, UT 84111-4904
Telephone: (801) 328-3131
Facsimile: (801) 578-6999